Branched pollen tubes have been observed in *Hibiscus vitifolius, H. esculentus, H. Sabdariffa, H. populneus, H. cannabinus* (Indian, Ibadan, and Nigerian races), and first generation hybrids of *H. cannabinus* and *H. radiatus*.

Low fertility of pollen observed in *H. cannabinus* and *H. radiatus* is believed to have been caused by lateness of season.

Department of Agriculture,
Calcutta University

Literature Cited

Amici, G. 1830. Note sur le mode d'action du pollen sur le stigmate (extraite d'une à M. Mirbel). Ann. Sci. Nat. ser. 1, 21: 329–332.

Datta, R. M. 1956. Pollen grain morphology in the genus Corchorus (Tiliaceae). Phyton 6(2): 79–86.

Erdtman, G. 1952. Pollen morphology and plant taxonomy. Angiosperms. Waltham, Mass.

Ferguson, N. 1924. On the determination of abortive pollen in plants. British Jour. Exp. Biol. 2: 65–73.

Guignard, L. 1904. La double fécondation chez les Malvacées. Jour. de Bot. 18: 296–308.

Iyenger, N. K. 1938. Pollen tube studies in Gossypium. Jour. Genet. 37: 69–106.

Kostoff, D. 1932. Pollen abortion in species hybrids. Cytol. 3: 337–339.

Lang, C. H. 1937. Investigation of the pollen of Malvaceae with special reference to the inclusions. Jour. Roy. Micr. Soc. 57: 75–102.

Purewall, S. S., and G. S. Randhawa. 1947. Studies in Hibiscus esculentus L. I. Chromosomes and pollination. Indian Jour. Agr. Sci. 17: 129–136.

Stenar, H. 1925. Embryologische Studien. I. Zur Embryologie der Columniferen. Uppsala.

Wodehouse, R. P. 1935. Pollen grains, their structure, identification and significance in science and medicine. New York and London.

Zander, E. 1935. Pollengestaltung und Herkunftsbestimmung Blütenhonig. Berlin.

A NEW SPECIES AND SOME NOMENCLATURAL CHANGES IN SOLANUM, SECTION TUBERARIUM

Donovan S. Correll

In 1852, Dunal described *Solanum lycopersicoides,* no named because of its close resemblance to some of the species in the genus *Lycopersicon,* the common garden tomato. Sometime between 1909 and 1914, Weberbauer collected a plant in an undesignated locality in Peru which, though quite different, superficially resembled *Solanum lycopersicoides*. Again, in 1925 Pennell obtained the same plant at Quive in the Department of Lima.[1] Until now, no apparent attempt was ever made to identify these collections. This distinctive plant is here named in honor of the latter

[1] Since preparing this manuscript, Earl E. Smith, Ramón Ferreyra and I found a solitary sterile plant above Canta in the Department of Lima, Peru, on March 7, 1958.

collector, an unassuming and scholarly gentleman who will long be remembered for his work on the family Scrophulariaceae.

These two species belong to Series Juglandifolia in Subsection Hyperbasarthrum of Section Tuberarium, characterized by being somewhat woody non-tuber-bearing plants with yellow stellate or rotate-stellate corollas, and pedicels that are articulate above the very base. Because these two species appear to stand alone as the closest links between *Solanum* and *Lycopersicon,* they are both here treated for convenience in comparing their individual characteristics.

Leaflets suborbicular, coarsely crenate; pedicels articulate well below the middle or near the base ..... *S. pennellii*
Leaflets irregularly pinnatifid; pedicels articulate less than 3 mm. below the calyx. ..... *S. lycopersicoides*

Solanum pennellii sp. nov. Herba habitu S. lycopersicoidei similis, omnino glanduloso-pubescens, ramosa; folia imparipinnata; foliola petiolulata, suborbicularia, crasse crenata, basi truncata vel cordata; inflorescentia terminalis vel ramos laterales terminans, corymbosa vel racemosa; pedunculus bracteis singulis vel pluribus semiorbicularibus aliquando in inflorescentiam procurrentibus ornatus; pedicelli multo infra medium vel prope basim articulati; flores flavi vel lutei; corolla lobis late ovatis, acutis vel subobtusis rotato-stellata; antherae diadelphicae, supra medium valde curvatae; stylus pilis longis sericeis ornatus, prope apicem valde curvatus; ovarium globosum.

Plant woody-herbaceous, erect, 5 dm. or more tall, glandular-pubescent throughout, rootstock unknown but doubtless non-tuber-bearing; stem woody; leaves odd-pinnate, up to 13 cm. long, with few interstitial leaflets, the leaflets 5 or 7, prominently petiolulate, suborbicular, coarsely crenate, truncate to cordate at base, up to 4 cm. in diameter; petiolules up to 1 cm. long; pseudostipular leaves shaped similarly to the leaflets but somewhat reniform, 1–2 cm. long; inflorescence terminal or terminating the lateral branches, corymbose or racemose, few- to many-flowered; peduncle slender, up to 8 cm. long, provided with one or more semiorbicular bracts that sometimes continue into the inflorescence; pedicels slender, up to 2 cm. long, articulate well below the middle or near the base; flowers lemon-chrome; calyx 5–6 mm. long, divided to near the base into oblong-elliptic obtuse lobes; corolla rotate-stellate, up to 3.5 cm. in diameter, the lobes broadly ovate and acute to subobtuse; anthers of two lengths, linear-oblong in outline, the largest up to 10 mm. long, the smaller up to 7 mm. long, strongly recurved above the middle, opening by two pores at the apex that soon become slit to the base of the anthers, the filaments rather thick, up to 2 mm. long; style up to 11 mm. long, strongly curved near the apex, adorned with long silky hairs for most of its length; stigma elongate and prominent; ovary orbicular; fruit unknown but probably orbicular.

Specimens examined. Peru. Department of Lima, Quive, open rocky

slope, herb, corolla "lemon chrome," alt. 800–1000 m. ("plant ascending to 2500 m."), June 9, 1925, *F. W. Pennell 14304* (type, PH, sheet no. 642829); Peru, 1909–1914, *Weberbauer 5315* (without other data) (F, no. 627894); Peru, hanging from cut along road above Canta, Department of Lima, 2,850 m. alt., plant branching from a woody rootstock, no flowers or fruits present, March 7, 1958, *Correll, Smith & Ferreyra P287* (LUNDELL).

Solanum lycopersicoides Dunal in DC. Prodromus 13 (1):38. 1852; Bitter, Repert. Sp. Nov. 11:466. 1912; Ochoa, "Agronomia" 18 (74): 13–16. 1953.

Plant bushy, glandular-pubescent throughout, up to 2.5 m. tall, non-tuber-bearing; stem woody, erect or tortuously ascending; leaves asymmetrically pinnate-pinnatified, up to 13 cm. long, with numerous toothed interstitial leaflets, the leaflets 7 to 11, sessile to decurrent on the rachis or rarely shortly petiolulate, irregularly pinnatifid, up to 5 cm. long, with the pinnules often toothed and the ultimate segments obtuse to acute; pseudostipular leaves lobed similarly to the leaflets, about 1 cm. long; inflorescence terminal, subterminal or terminal on the branches, corymbose, many-flowered; peduncle rather stout, 4–9 cm. long; pedicels slender, up to 12 mm. long, articulate 1–2 mm. below the calyx; flowers bright yellow, showy; calyx 3.5–5.5 mm. long, divided to about the middle into ovate to ovate-lanceolate acute to acuminate lobes; corolla rotate-stellate, about 2 cm. in diameter, with short triangular lobes, coarsely pubescent on the outer surface; anthers 3.5–5 mm. long, oblong-elliptic in outline, opening by two large pores at the apex that commonly become longitudinal slits on the inner surface extending from apex to base, the filaments filiform, 1–2 mm. long; style 7–12 mm. long, slender, pubescent below, with a conspicuously clavellate stigma; fruit orbicular, about 6 mm. in diameter, purple-black, marked with green.

Specimens examined. Peru. Department of Tacna: Cordillera de Palca, *A. D'Orbigny 291* (type collection, P, MPU); Cordillera de Palca, 1851, *Weddell* (P); Quebrada de Palca, *von Tschudi* (W); Prov. Tarata, open hillside among lava boulders, alt. 2900 m., bush 2–2.5 m. high, calyx yellow-green, corolla bright yellow, fruit purple-black and green at base, April 25, 1942, *Metcalf 30404* (G, MO, US); Prov. Tarata, near Candarave, dry open hillside, in clay soil and volcanic rock, 2800 m. alt., bush 0.7–2 m. tall, calyx green, corolla yellow, fruit green and black at base, April 15–25, 1942, *Metcalf 30382* (G, MO, US); Causiri, a un kilometro mas arriba de Palca y a 45 klmts. de Tacna, March 20, 1953, *Ochoa 2035* (GH, US).

Although these two species are closely allied, they differ from each other in the shape of their leaflets as well as in their floral characters. The subbasal articulation of the pedicels of *S. pennellii* in contrast to the subapical articulation of those of *S. lycopersicoides* is distinctive. Although the anthers of both species eventually split to the base at anthesis, those of *S. pennellii* have at first prominently marginate terminal pores while

FIG. 1. *Solanum*. A. *Solanum lycopersicoides*, upper part of plant, *D'Orbigny 291*; B. *Solanum pennellii*, upper part of plant, *Weberbauer 5315*.

the anthers of *S. lycopersicoides* appear never to have well defined terminal pores. In fact, many of the species in Section Tuberarium have anthers that are split to the base, although this process may be considerably delayed. The weak tissue below the apical pores is frequently easily ruptured.

These two species are living evidence in support of those who would combine *Solanum* and *Lycopersicon*. They are true representatives of a transition between these two genera. The lack of an apical sterile tip to the anthers, however, traditionally place them in *Solanum,* although the anthers of both are commonly split their entire length as in *Lycopersicon* and both closely resemble in habit some of the species in that genus. Furthermore, Rick (in Proc. Nat. Acad. Sci. 37 (11):741–744. 1951) has demonstrated that *Solanum lycopersicoides* can be hybridized with *Lycopersicon esculentum* Mill.

Solanum hougasii Correll nom. nov. *Solanum verrucosum* Schlecht. var. *spectabilis* Correll, U. S. Dept. Agr., Agr. Monogr. No. 11:228, figs. 164–166. 1952. *Solanum spectabile* (Corr.) Hawkes, Ann. and Mag. Nat. Hist., ser. 12, vol. 7:701. September, 1954; Swaminathan and Hougas, Am. Jour. Bot. 41:650. October, 1954 (as *S. spectabilis*), non *S. spectabile* Steudel, Nomenclator Botanicus, ed. 2, pt. 2:606. 1841.

The above authors, Hawkes, Swaminathan and Hougas, independently came to the same conclusion regarding the proper status of this plant. Apparently sensing a need for urgency, they published their results within a month of one another. Unfortunately, in elevating the variety to a specific category a homonym resulted. It is a pleasure to rename this Mexican species for R. W. Hougas, the able and congenial project leader for the Inter-regional Potato Introduction and Preservation Project at Sturgeon Bay, Wisconsin.

Solanum nelsonii Correll nom. nov. *Solanum confusum* Correll, U. S. Dept. Agr., Agr. Monogr. No. 11:63, figs. 41–42. 1952, non *S. confusum* Morton, Contr. U. S. Nat. Herb. 29:70. 1944.

At the time of publishing my work on *Solanum* in 1952, the Gray Index to which I referred was, unknowingly to me, not up to date. This accounts for the publication of this homonym. This species, a native of Oaxaca, Mexico, is here renamed in honor of E. W. Nelson who collected the type specimen.

The author, who is in the process of classifying and coordinating all data regarding the species in the Section Tuberarium of *Solanum,* is indebted to the Agricultural Research Service, United States Department of Agriculture and National Science Foundation, as well as to Texas Research Foundation, for continuous support and encouragement in the pursuance of this difficult problem, of which this is a part.

Texas Research Foundation,
Renner, Texas